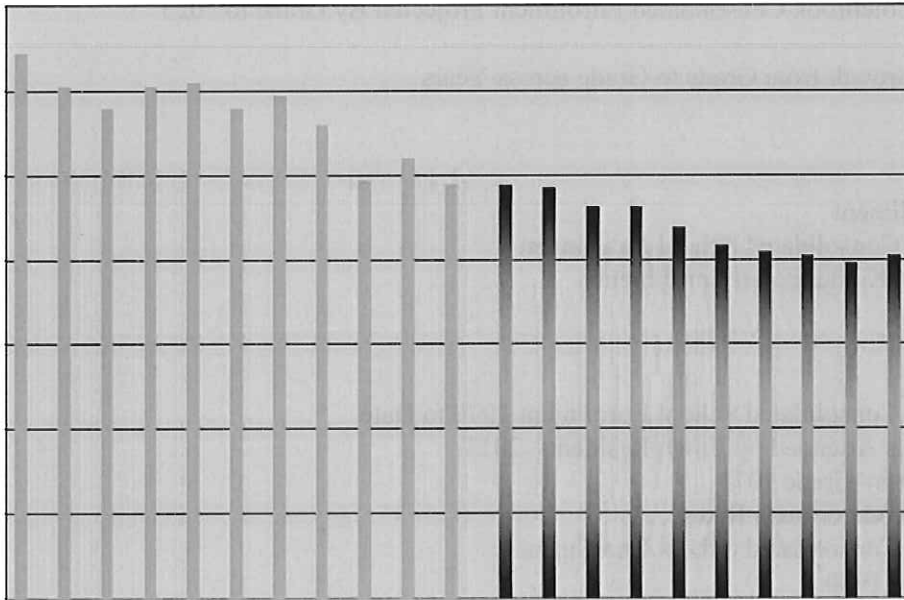


# COLEBROOK CONSOLIDATED SCHOOL ENROLLMENT PROJECTED TO 2023



Peter M. Prowda, PhD  
28 Old Mill Court  
Simsbury, CT 06070  
(860) 658-9919  
[peteprowda@yahoo.com](mailto:peteprowda@yahoo.com)

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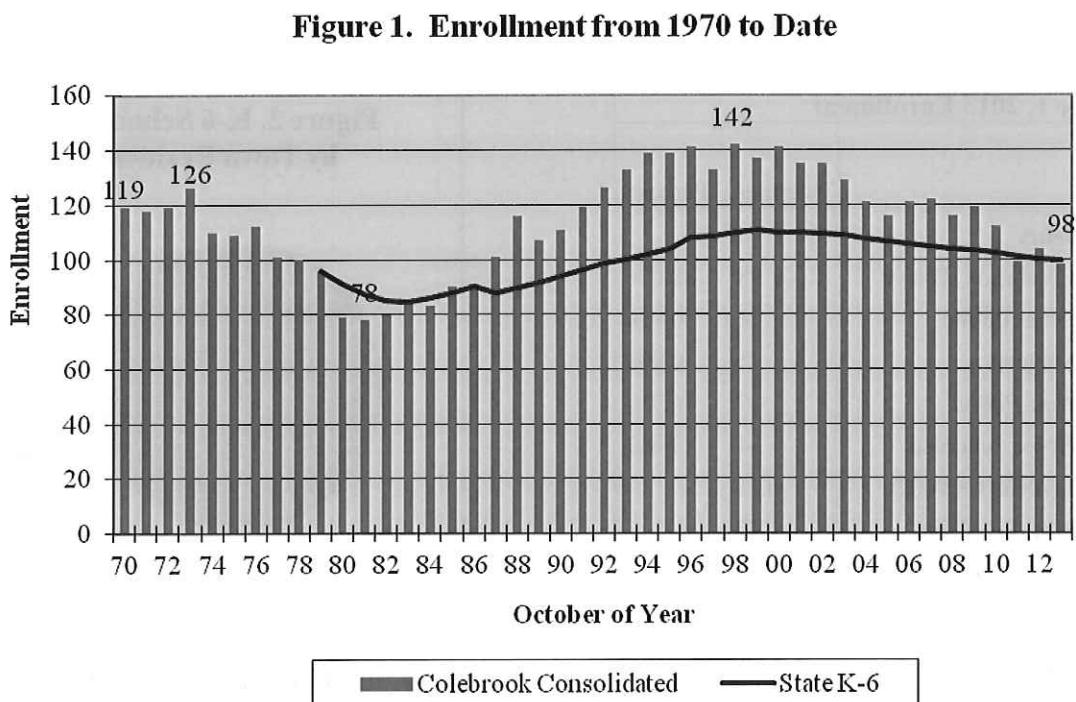
## Introduction

This report is a ten-year projection of enrollment for the Colebrook Consolidated School. It is based on residents attending the school in October of the school year. The report includes 44 years of enrollment to place the projection into a wider historical perspective. One of the primary drivers of future enrollment is births to residents. The report examines births and their relationship to kindergarten enrollment. Several factors that influence school enrollment - town population, women of child-bearing age, the labor force, housing, non-public enrollment and migration - are presented. Finally, the accuracy of earlier projections is examined.

Enrollment projections are a valuable planning tool. For budgeting the numbers can place requested expenditures into a per pupil context. This can inform the public about which expenditures represent continuing expenditures to support on-going programs and expenditures for school improvement and program expansion. They are an essential step in determining the staffing that will be needed in the future. This may facilitate the transfer of teachers from one grade to another or allow the hiring process to start earlier, which can increase the likelihood of attracting the best teachers in the marketplace. They are necessary component for school closing, consolidation or expansion. Projections are a critical and required step in planning for school facilities. The State of Connecticut requires eight-year school-based projections as a critical component of determining the size of the project for which reimbursement is eligible. This report is appropriate for that purpose.

## Perspective

Enrollment projections typically use the most recent five years of data. While the most recent past is viewed as the best predictor of the near future, it is informative to look at a broader perspective. Figure 1 shows the enrollment at the Colebrook Consolidated School from 1970 to date.



Enrollment in the school grew from 119 students in 1970 to 126 in 1973. Enrollment then went into a relatively short downward cycle that took it to 78 students in 1981. In those eight years, enrollment declined by 48 students or 38.1 percent. Between 1981 and 1998 enrollment was in an upward cycle. It grew by 64 students, or 82.1 percent, and reached a peak of 142 students. Enrollment is now in a down cycle. The October 2013 enrollment was 98 students, which was 44 students (31.0 percent) below the 1998 peak.

The Colebrook Consolidated School's enrollment pattern was roughly similar to that of the state's public schools in grades K-6. I have tracked public school elementary enrollment since 1979. Public school elementary enrollment bottomed in 1983, two years after Colebrook Consolidated. It reached a secondary peak in 1999. In those 16 years, state K-6 enrollment grew by 30.5 percent. Colebrook Consolidated School's period of growth was about the same as the state's, but more intense. The state's elementary enrollment has been declining for 14 years. Between 1999 and 2013, I estimate that it fell by 10.1 percent. Colebrook started the second downturn one year earlier than the state. The second decline at the Colebrook Consolidated School has been much steeper than the state's. Had the school followed the state pattern of enrollment since 1979, it would have had 99 students in October of 2013 instead of the 98 that were enrolled on that date.

### Current Enrollment

Table 1 and Figure 2 provide a picture of where Colebrook residents attended elementary school in October of 2013. The non-public enrollment is estimated. They show that 88.0 percent of Colebrook's elementary school-age residents attended the Colebrook Consolidated School in 2013. An estimated 6.7 percent of the school-age residents attended non-public schools in state. One school-age resident attended a magnet school and one attended a public school in another district. Four children (3.6 percent) were reported as being home schooled. There were no non-residents enrolled in the school in 2013. The projections in this report are based off of the 98 students who attended the Colebrook Consolidated School in October, 2013.

	Number	Percent
<b>Residents</b>		
A. Colebrook Public	98	88.0%
B. Other Public	1	0.9%
C. Magnets	1	0.9%
D. Non-Public	7	6.7%
E. Home Schooled	4	3.6%
<b>Total (A+B+C+D+E)</b>	111	
F. Non-Residents	0	
<b>Total Enrollment (A+F)</b>	98	

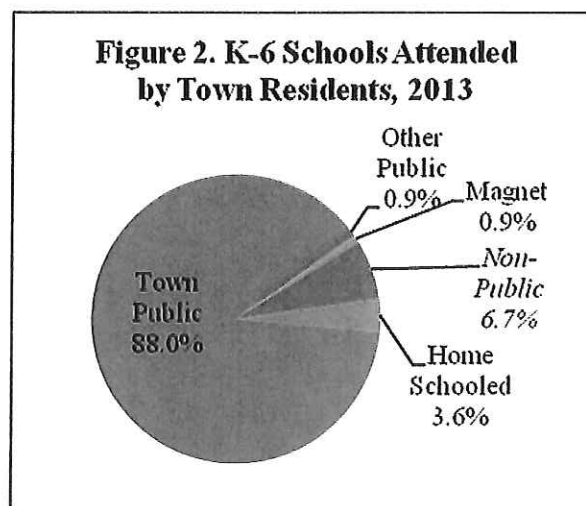
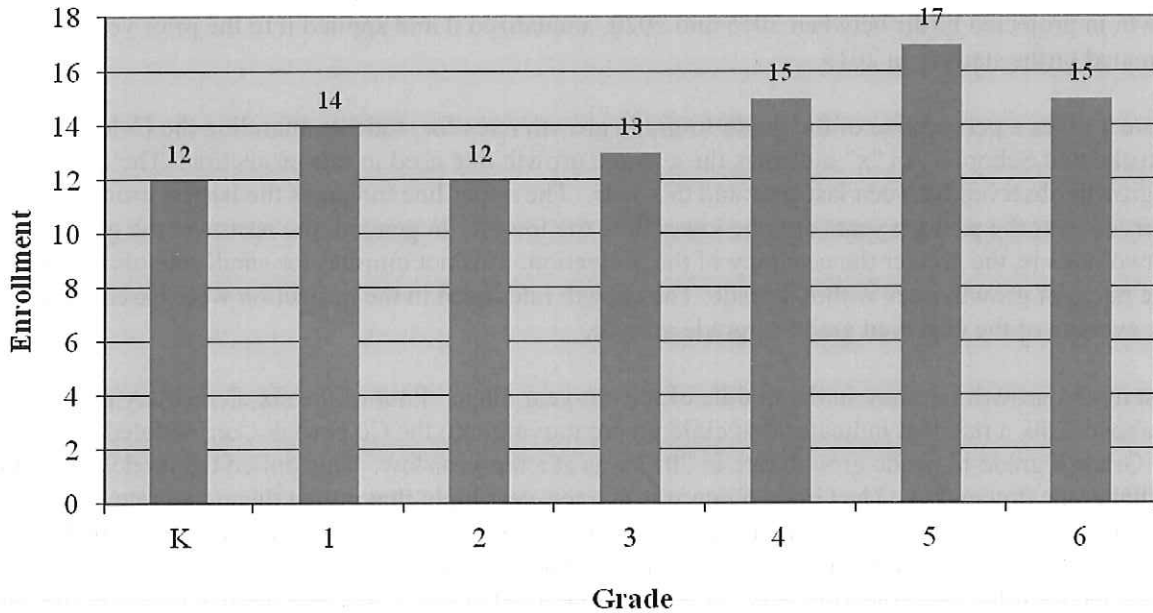


Figure 3 shows the October 2013 grade-by-grade enrollment by of students in the Colebrook Consolidated School. Grade 5 had the most students, 17. This was followed by Grades 4 and 6 with 15 students each. Kindergarten and Grade 2 were the smallest classes with only 12 students each, followed by grade 3 with 13 students. If current conditions continue, this year's Kindergarten class of 12 students will have 14 students when it enters Grade 6 in 2019. The current year enrollment by grade is the starting point for this projection. How it moves forward is discussed below.

**Figure 3. Enrollment By Grade, 2013**



### **Projection Method**

The projections in this report were generated using the cohort survival method. This is the standard method used by people running enrollment projections. For the grades above kindergarten, I compute grade-to-grade growth rates for ten years (see Appendix B). For example, if the number of fifth graders this year is 16 and the number of fourth graders last year was 15, then the growth rate is 1.067. A growth rate above 1.000 indicates that students moved in, transferred from a non-public school or they were retained. A growth rate below 1.000 means that students moved out, transferred or were not promoted from the prior grade. For each grade I calculate four different averages of the growth rates: a three-year average; a weighted three-year average; a five-year average and a weighted five-year average. I choose the average that seems to best fit the data. The average growth rate for a grade is applied to the current enrollment from the prior grade. The projection builds grade by grade and year by year.

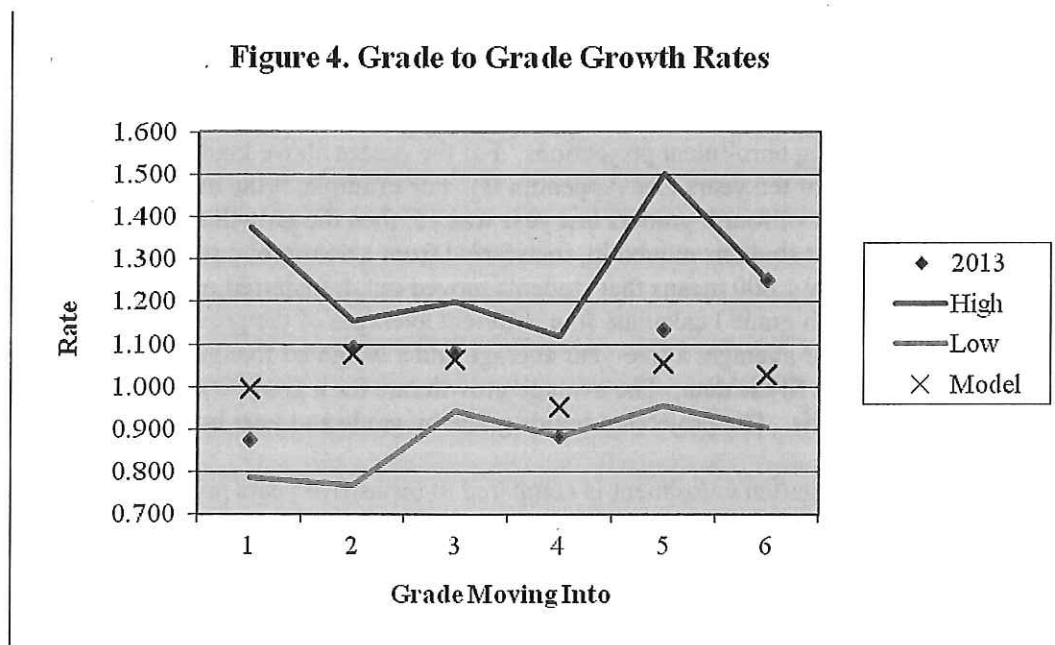
In the standard model, kindergarten enrollment is compared to births five years prior and some average of the observed growth or decline is used to project future kindergarten enrollment. My method breaks kindergarten enrollment into three parts: five-year olds; six-year olds entering kindergarten for the first time; and six-year old repeaters. Each component is analyzed separately and then combined to get total projected kindergarten. I used the five-year average of the three components when projected births were ten or more. Births in 2011 to 2014 are all likely to be less than 10. Based on observations of kindergarten enrollment when births are less than 10, I modified my standard approach and simply added five children to births five years prior to get an estimate of kindergarten. Five was the average numerical growth between birth and kindergarten observed for the recent birth cohorts of 2005, 2006, 2008 and 2009.

To extend the projection beyond four years, I need to estimate births. The State Department of Public Health recorded 12 births to Colebrook residents in 2010. That is the last official count. The preliminary

counts for 2011 and 2012 are 5 and 7 births, respectively. To estimate births in 2013, I added to the one in-state birth reported through August, the average of births in September through December in 2011 and 2012 and the average births out-of-state in those two years. That yielded two births in 2013. To estimate births in 2015, I took my calculation of the fertility rates in DRG E towns in 2010 and applied it to the Connecticut State Data Center's projection of Colebrook women of child-bearing ages in 2015. That yielded 10 births in 2015. I prorated births in 2014. To estimate births in 2016 to 2018 I calculated the growth in projected births between 2015 and 2020, annualized it and applied it to the prior year's estimated births starting in 2015.

Figure 4 gives a perspective of the grade-to-grade growth rates for students attending the Colebrook Consolidated School. An "x" indicates the average growth rate used in this projection. The diamond is the growth observed between last year and this year. The upper line indicates the largest growth rate observed over the past ten years and the lower line, the lowest. In general, the narrower the gap between the two lines is, the greater the accuracy of the projection. It is not unusual for small schools to have a wide range of growth rates within a grade. The growth rates used in the projection were based on a five-year average of the observed grade-to-grade growth.

Most model growth rates are in the middle of the ten-year range. Four of the six elementary growth rates are above 1.00, a rate that indicates that children are moving into the Colebrook Consolidated School. The Grade 4 grade-to-grade growth rate in 2013 was at a ten-year low. This pulled the model growth rate for that grade downward. The Grade 6 rate was at a ten-year high; that pulled the model rate upward. Two of the model growth rates were above the 2013 rates (grades 1 and 4), two were about equal (grades 2 and 3) and two were below the 2013 growth rates (grades 5 and 6). The average growth rate across grades 1-6 used for the projection was 1.029. The rate in 2013 was 1.052; the median rate over the past 20 years was 1.015.



Enrollment data from 2003 to 2012 were taken from the files of the Connecticut State Department of Education. The public school data are available on the Department's website at [www.sde.ct.gov](http://www.sde.ct.gov). Data for 2013 were provided by the Colebrook central office. All enrollment data after 2010 are subject to minor changes as they are reviewed and audited. Births from 1980 to 2013 were provided by the Healthcare Quality, Statistics, Analysis and Reporting Unit of the State Department of Public Health.



## Colebrook Consolidated School Enrollment

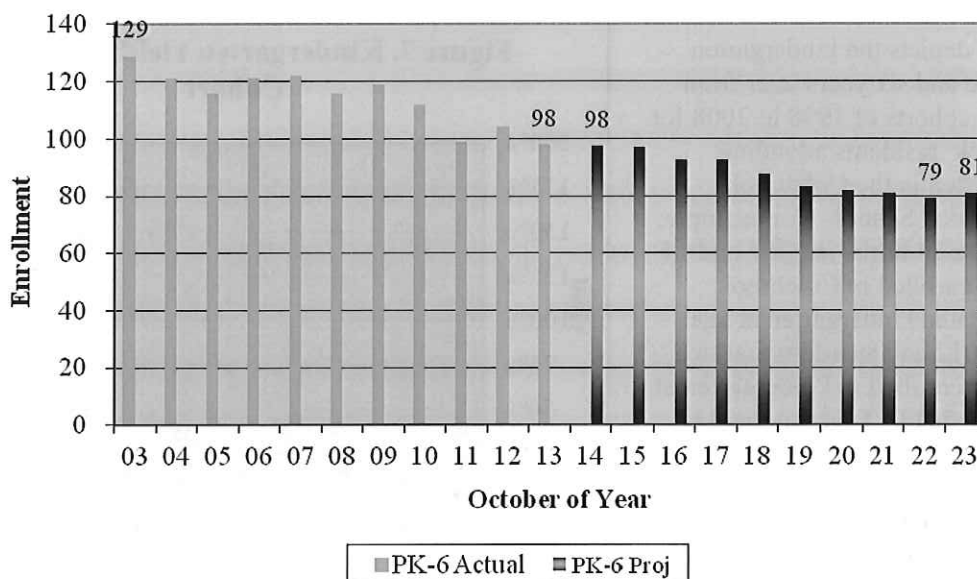
Table 2 and Figure 5 present actual enrollment from 2003 to 2013 and projected enrollment through 2023 at the Colebrook Consolidated School. Between 2003 and 2013, the school's enrollment declined from 129 to 98 students. In those ten years, the school's enrollment declined by 31 students or 24.0 percent. State enrollment in grades K-6 is projected to fall 8.5 percent in that interval. The school's enrollment decline of 15.7 percent between 2002 and 2012 (the latest comparable data available) was less than most comparable districts (schools) in the region. Only the enrollment decline in Canaan (-7.3 percent) was smaller. The declines in Hartland (-15.9 percent), Kent (-19.0 percent), Norfolk (-23.0 percent), Salisbury (-29.4 percent) and Sharon (-36.2 percent) were larger.

I project that next year's school enrollment will be the same as this year's. Then the decline resumes, but at a more modest pace. I anticipate enrollment will bottom out at 79 students in 2022. If births recover, enrollment will be 81 students in 2023. This will be 17 students (17 percent) below the October 2013 count. Statewide, I have projected an 11.6 percent decrease in grade K-6 enrollment in that period. In 2013 there was an average of 14.0 students per grade; in 2023, I project the average will be 11.6 students. Over the ten-year projection period, I believe enrollment at the Colebrook Consolidated School will average 87 students. This is below the average of 113 students observed over the past ten years.

Year	Students	Percent Change
2003	129	
2004	121	-6.2%
2005	116	-4.1%
2006	121	4.3%
2007	122	0.8%
2008	116	-4.9%
2009	119	2.6%
2010	112	-5.9%
2011	99	-11.6%
2012	104	5.1%
2013	98	-5.8%
2014	98	-0.5%
2015	97	-0.5%
2016	93	-4.6%
2017	93	0.0%
2018	88	-5.4%
2019	83	-4.8%
2020	82	-1.6%
2021	81	-1.2%
2022	79	-2.5%
2023	81	2.5%

These figures include pre-kindergarten children. From 2003 to 2013 there were two years where one child was reported in pre-kindergarten. There were no children enrolled in these programs in 2013. My projection model keeps this figure constant at the 2013 level for the next ten years.

**Figure 5. Colebrook Consolidated Enrollment**



## Factors Affecting the Projection

The primary reasons for elementary enrollment change lie in the births and yield from the birth cohort. Figure 6 presents the officially recorded births from 1980 to 2010 and my preliminary and estimated births through 2018. Births ranged from a low of six in 2008 to a high of 17 in 1982. The preliminary counts of births in 2011 and 2012 are 5 and 7, respectively.. Based on one in-state birth through August of 2013, I estimate there will be only two births in that year. In the 1990s there was an average of 12 births annually. In the five years from 2004 to 2008 (this fall's kindergarten through 4<sup>th</sup> graders) births averaged 10. Births in the 2009 through 2013 period will likely average seven. The projection in years 2019 to 2023 assumes an average of nine births annually between 2014 and 2018. This is based in part upon the 2010 fertility rates and the Connecticut State Data Center projection of Colebrook women of child-bearing ages in 2015 and 2020.

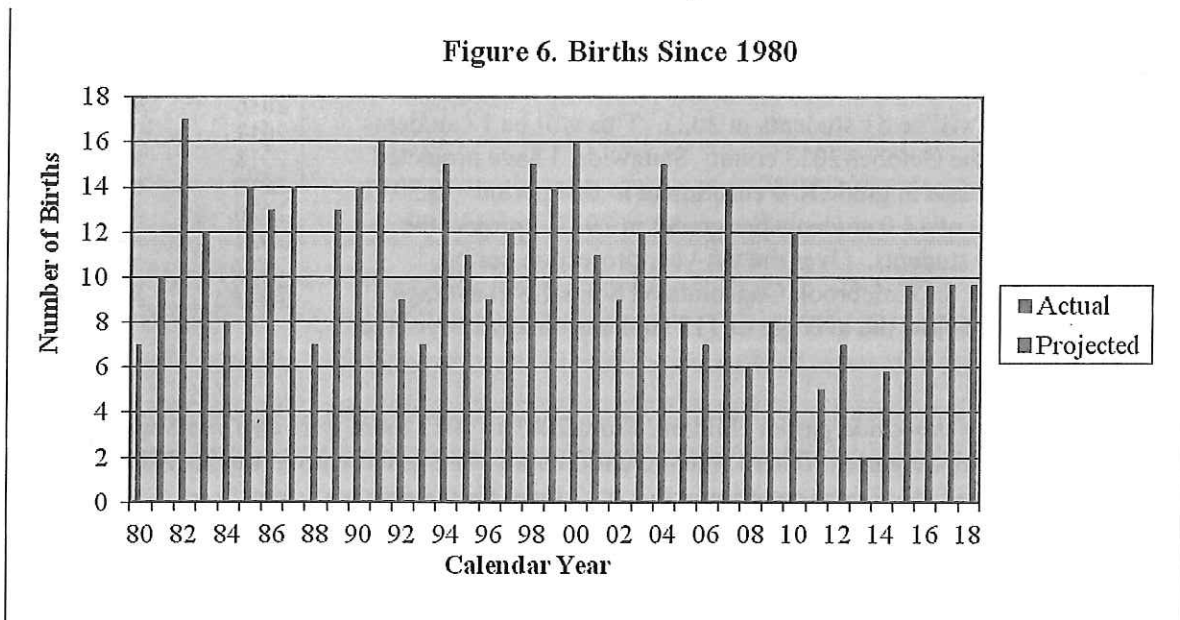
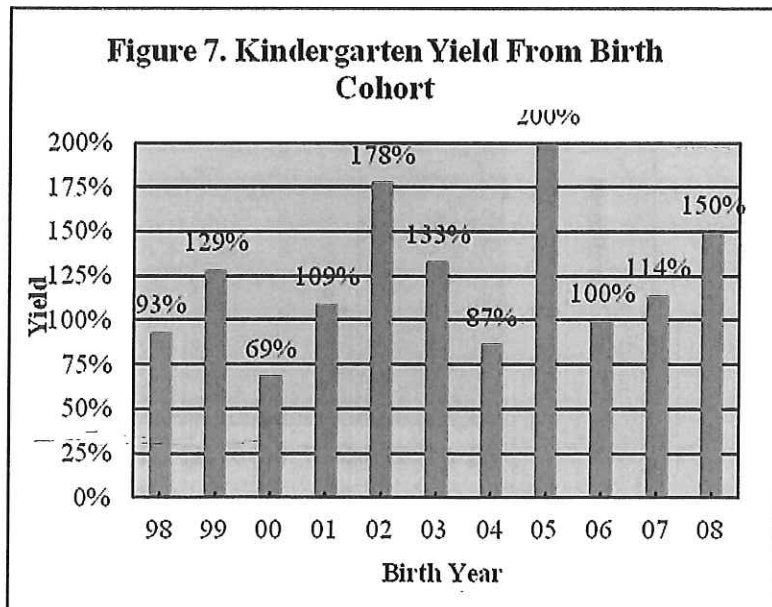


Figure 7 depicts the kindergarten yield five and six years later from the birth cohorts of 1998 to 2008 for Colebrook residents attending kindergarten in the Colebrook Consolidated School. For example, there were 14 births in 2007 and 14 children enrolled in Colebrook Consolidated kindergarten at age five in 2012 and an additional two who first enrolled in kindergarten at age six in 2013. That is a yield of 114 percent. The yield from the birth cohort ranged from a low 69 percent in 2000 to a high of 200 percent in 2005. The estimated yield from births in 2006 is 150





percent. Note that the 2008 yield is an estimate because we will not know the actual number of children who will enter kindergarten for the first time as six-year olds until October 2014. Yields below 100 percent generally mean that parents move out of town or enroll their child in another school system after giving birth in town. Yields above 100 percent generally mean that young families move into Colebrook after giving birth elsewhere. The average yield in the five-year look-back period for the projection was 130 percent.

Table 3 gives a history of enrollment in kindergarten since 2003 and relates the components of kindergarten enrollment back to the appropriate birth cohort. Retention is tied to the prior year's kindergarten enrollment. To estimate kindergarten enrollment, I used when births were ten or more the five-year average of retentions, and yields from births five and six years ago. In those years I estimated kindergarten from 110.0 percent of births five years ago, 14.3 percent of births six years ago, and 2.9 percent of current Kindergarten students retained. When births were less than ten (the kindergarten classes of 2014, and 2016-2019) I simply added five to the births five years prior to estimate kindergarten enrollment.

Year	Birth Year	Births	K	Retained From Prior Year			Non-Retained			Percent Retained	Yield From Births 5-Years Prior	Yield From Births 6-Years Prior	Total Yield From Birth Cohort
				Born 5-Years Prior Resident	Non-Resident	Born 6 Years Prior	Born 5-Years Prior Resident	Non-Resident	Born 6 Years Prior				
2003	1998	15	14	0	13	0	1	0.0%	86.7%	8.3%	93.3%		
2004	1999	14	16	0	15	0	1	0.0%	107.1%	6.7%	128.6%		
2005	2000	16	12	0	9	0	3	0.0%	56.3%	21.4%	68.8%		
2006	2001	11	14	0	12	0	2	0.0%	109.1%	12.5%	109.1%		
2007	2002	9	14	0	14	0	0	0.0%	155.6%	0.0%	177.8%		
2008	2003	12	16	0	14	0	2	0.0%	116.7%	22.2%	133.3%		
2009	2004	15	15	0	13	0	2	0.0%	86.7%	16.7%	86.7%		
2010	2005	8	14	0	14	0	0	0.0%	175.0%	0.0%	200.0%		
2011	2006	7	8	1	5	0	2	7.1%	71.4%	25.0%	100.0%		
2012	2007	14	16	0	14	0	2	0.0%	100.0%	28.6%	114.3%		
2013	2008	6	12	1	9	0	2	6.3%	150.0%	14.3%	150.0%		
<b>3-Year Average</b>									5.3%	103.7%	20.7%	121.4%	
<b>Weighted 3-Year Average</b>									4.3%	120.2%	20.8%	129.8%	
<b>5-Year Average</b>									<b>2.9%</b>	<b>110.0%</b>	<b>14.3%</b>	<b>130.2%</b>	
<b>Weighted 5-Year Average</b>									3.5%	120.1%	18.5%	132.9%	

The correlation between births and kindergarten enrollment five-year later was an extremely low 0.19 over the 1985 to 2013 period. If this relationship were used to predict kindergarten enrollment, the estimate would have been off by an average of three children annually over the past ten years. The cohort survival method, even with my breakout into five-year olds, six-year old delayed entrants and children retained, cannot overcome the underlying unpredictability of kindergarten enrollment from earlier births.

## Context of the Projection

The cohort-survival method needs only births and a few years of recent enrollment data to generate a projection. Mathematically, nothing else matters. But enrollment changes do not occur in a vacuum. Events and policies in the district, community and region all have some bearing on enrollment. Remember that a basic assumption of the cohort-survival method is that the recent past can be a good predictor of the near future. It is incumbent for every receiver of a projection to determine what events happened in the past five years and whether they are likely to change. Analyzing how the factors underlying the projection changed in the prior year can be an important step in this process.

To assist in this endeavor, this report examines seven factors that could affect enrollment: town population; women of child-bearing age; people in the labor market; new home construction; sales of existing homes; non-public enrollment and student migration.

Figure 8 presents the US Census Bureau estimate of Colebrook population growth between July, 2010 and 2012. In that period, the town population is estimated to have declined by 23 people. The population loss of 1.55 percent was the 167th ranked in the state. In contrast, Litchfield County declined by 1.17 percent, the state grew by 0.42 percent and communities with similar economic and need characteristics declined by 0.02 percent. The 2010 census shows that from April 2000 to April 2010 Colebrook's population grew from 1,471 people to 1,485. The 14-person growth was the smallest since the decade of the 1930s. The 1.0 percent increase between 2000 and 2010 was the 146th ranked in the state.

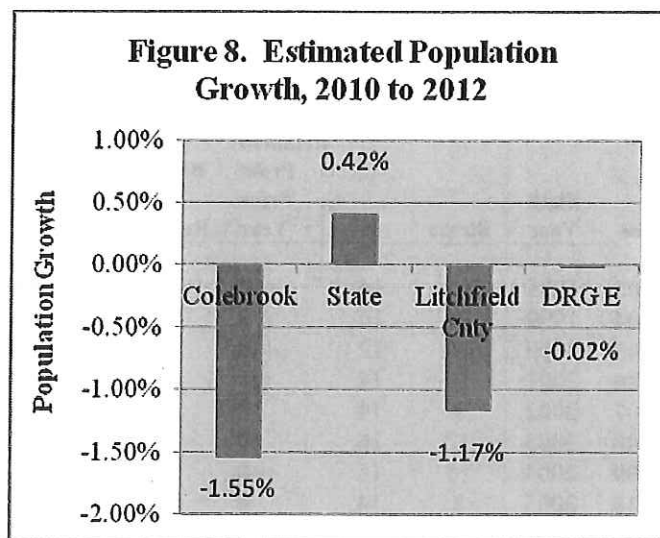


Figure 9 presents the Connecticut State Data Center's population projections for Colebrook's residents 0-14 years of age in the years 2015 and 2020 along with the 2010 Census population. They project that population ages 0-4 will ease from 56 children in 2010 to 45 children in 2020. The population ages 5-9 is projected to decline by 33 percent, going from 75 in 2010 to 55 in 2015 and 50 in 2020. The number of children ages 10-14 is projected to decline from 110 in 2010 to 58 in 2020. This independent projection of town births supports this report's projection of a decline in school enrollment.

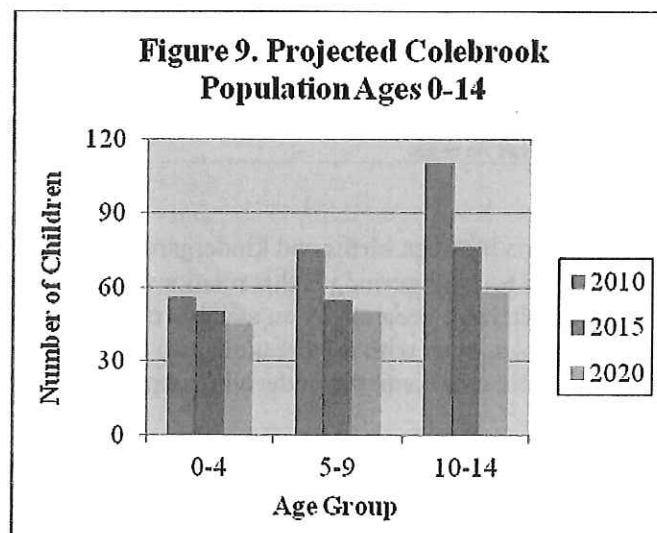


Figure 10 presents the number of women of child-bearing age from the 2000 and 2010 censuses. There were 16 births to Colebrook residents in 2000 and 12 in 2010. In communities such as yours, women in the 25-29 age group have the highest rate of births. The number of women in this group was up slightly from 27 in 2000 to 33 in 2010. They are projected to plummet to 13 in 2015. The second highest birth rate in communities like yours is women ages 30-34. The number in that age range was down significantly from 56 in 2000 to 25 in 2010. It is projected to recover slightly to 39 in 2015. The only other key age range that increased was 20 to 24 year-olds.

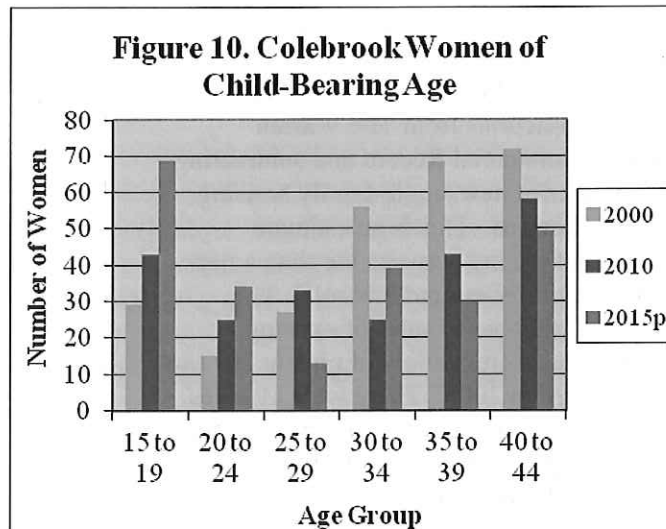


Figure 11 examines the number of people in the labor force from the US Department of Labor, Bureau of Labor Statistics. These are people 16 years of age or older working or actively seeking employment. Since it excludes most students and the elderly, I find it a very rough proxy of the number of school-age families. The Colebrook labor force decreased 3.4 percent between 2008 and 2012. This was lower than the state (+0.3 percent) and Litchfield County (-1.0 percent). The 2012 unemployment rate of 5.7 percent continued to rise. However, the town rate is much better than the state rate of 8.4 percent and the Litchfield County rate of 7.7 percent.

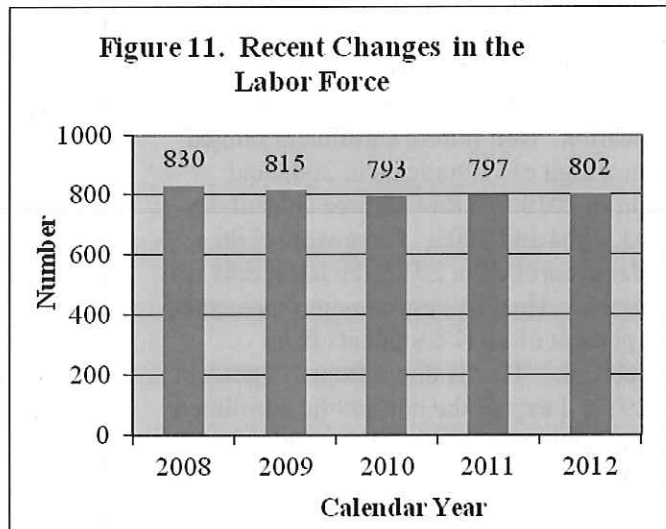


Figure 12 presents the net new housing units constructed from 2002 to 2012 from the State Department of Economic and Community Development. In the past ten years the number of net (of demolitions) new housing units constructed in Colebrook ranged from a high nine in 2004 down to a loss of one in 2009. There was one house permitted in 2012. In the five-year look-back period for this projection, there was an average of one net new housing unit constructed. The 2010 census indicated that Colebrook had 722 housing units in April 2010, of which 81.6 percent were occupied. There was an average of 2.52 people per occupied unit. About 30 percent of households had a child under the age of 18.

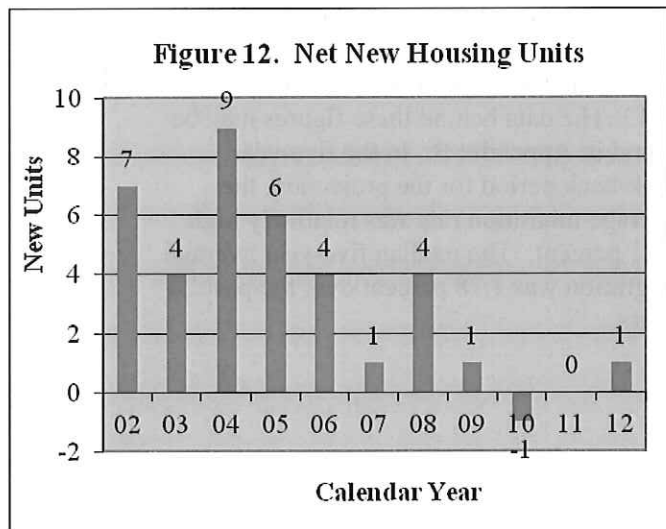


Figure 13 presents my estimate of the number of sales of existing homes. I derived it by taking the number of real estate transactions from The Warren Group/Commercial Record and subtracting the number of new single-family housing units authorized. This is an estimate because of the lag between the time a new house is authorized and it is sold. The estimated number of sales of existing homes ranged from a low of nine in 2011 to a high of 36 in 2005. There were 19 sales of existing homes in 2012. In the five-year look back period for the projection, there were 18 sales annually.

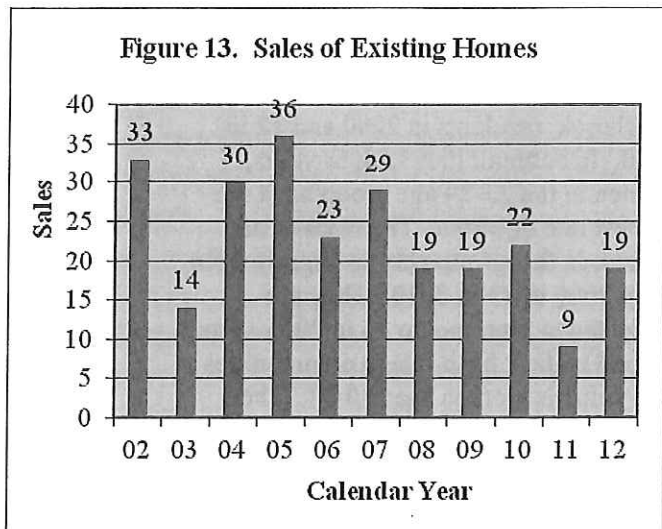


Figure 14 presents the non-public elementary school enrollment over the past ten years for students from the town of Colebrook. The data are from the records of the Connecticut State Department of Education. Non-public enrollment ranged from a high of 10 students in 2009 and again in 2010 to a low of three students in 2003, 2004 and 2005. There were eight students enrolled in 2012, the latest data available. The 2012 enrollment represented 6.6 percent of all K-6 students from Colebrook. That is down from 7.8 percent in 2010. I expect the non-public enrollment from Colebrook will be about the same in 2013.

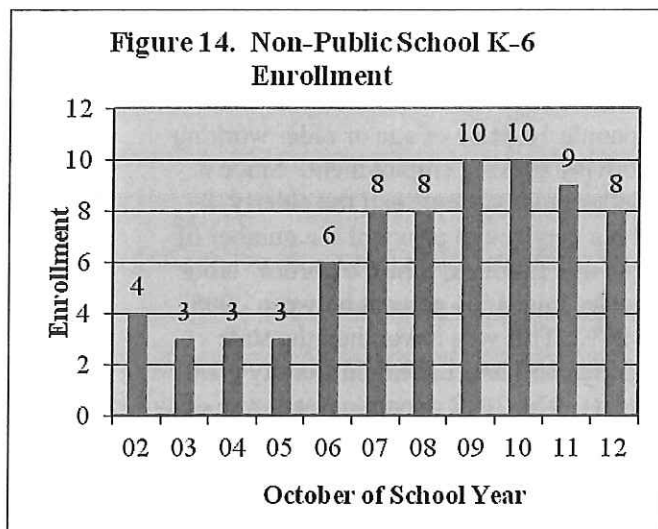
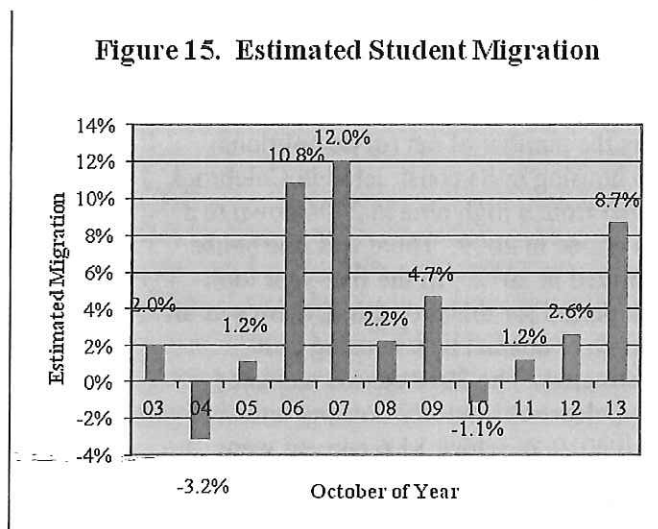


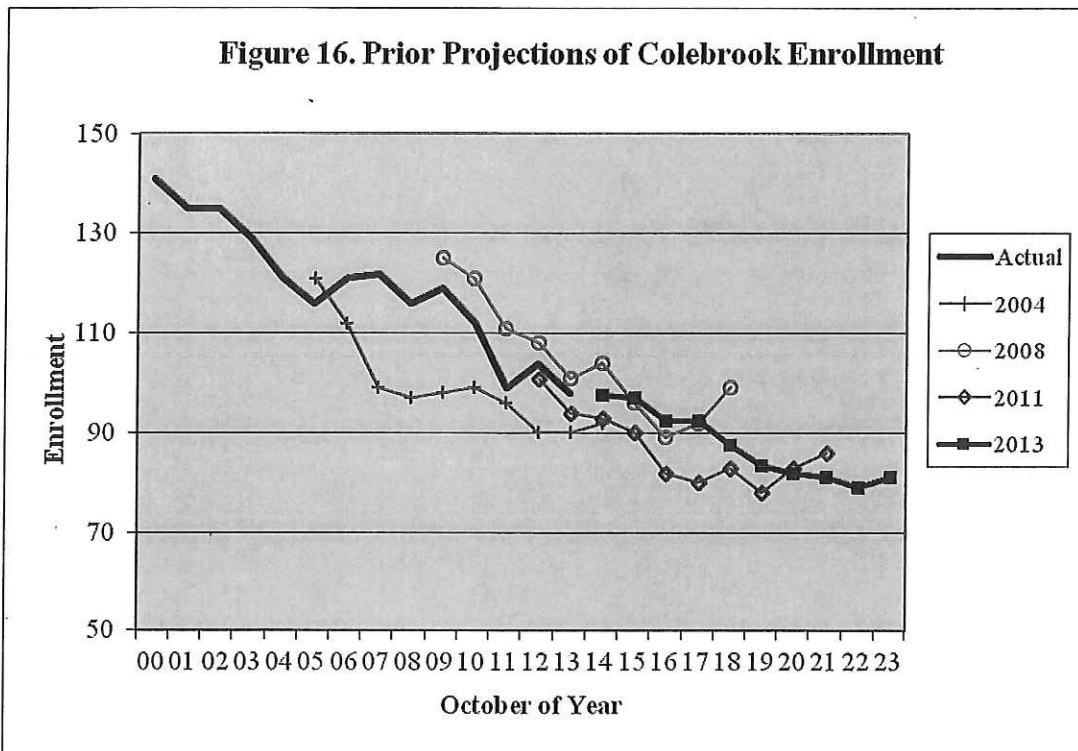
Figure 15 presents the estimated migration of students from Colebrook. Estimated migration ranged from a low of -3.2 percent in 2005 to a high of 12.0 percent in 2008. The estimated migration was 8.7 percent in 2013. The data behind these figures may be found in Appendix B. In the five-year look-back period for the projection, the average migration rate was relatively high 3.21 percent. The median five-year average migration was 1.78 percent over the past 20 years.





## Prior Projections of Enrollment

The cohort-survival projection method works by moving forward the pattern of recent events that are subsumed within the grade-by-grade enrollment. This works very well when communities are stable. That includes places that are growing or declining at a steady rate. One way to know if that assumption is valid is to examine how past projections have fared. Figure 16 presents the enrollment projections that I have run for Colebrook since 2003. The average one-year error rate for the three projections I ran between 2003 and 2011 was 4.1 percent. The average five-year error rate for the two projections I ran between 2003 and 2008 was 10.4 percent or 2.0 percent per year. My 2012 projection had a one-year error rate of 2.9 percent. Over the two years that projection has been running, it is four students low (4.1 percent). That is an annual error rate of 2.1 percent.



In my work I have found the cohort-survival method provides estimates that are sufficiently accurate for intermediate-range policy planning. The eight-year planning horizon for school construction grants is at the limit of the useful accuracy of the method. I analyzed the eight-year accuracy of the district projections from across the state that I ran in 2004. I found for the 67 district-level projections that I ran in 2004 the median projection was 5.5 high in predicting 2012 enrollment. That is an annual error rate of 0.7 percent. The absolute error rate (regardless of whether it was high or low) averaged 8.6 percent. That error was less than five percent in 46 percent of the projections and more than 15 percent in 15 percent of the projections. Among the 87 elementary projections run, the median projection was 9.5 percent high (1.1 percent annually). Among the 70 middle school projections run, the median projection was 8.2 percent high (1.0 percent annually). This illustrates what an economic downturn can do to projections run with the cohort-survival method.



## Summary

Colebrook Consolidated School enrollment has been moving irregularly lower since 1998. It is projected to decline 17 percent from 98 students in 2013 to 81 students in 2023. In 2013 there was an average of 14.0 students per grade; in 2023 the average is projected to be 11.6 students. Over the ten-year projection period, I believe enrollment at the Colebrook Consolidated School will average 87 students. This is below the average of 113 students observed over the past ten years.

This report is projecting a decline in enrollment. It is critical to remember that a projection is just a moving forward of recent trends. Is the forecast realistic? In the five years from 2004 to 2008 (this fall's kindergarten through 4<sup>th</sup> graders) births averaged 10.0. Births in the 2009 through 2013 period will average 6.8. This pattern of births, which except for the last half of 2013 have already happened, support the decline. My model assumes an average of 8.9 births in the 2014 to 2018 period. This increase was based on the fertility rates in 2010 from similar towns (DRG E) and on the Connecticut State Data Center projection of Colebrook women of child-bearing age in 2015 and 2020. I adapted my kindergarten model to take into account the relatively few births expected in the upcoming years. On average kindergarten enrollment will be 3.5 students more than births five-years prior, a growth of 44.5 percent over the ten-year projection period. This approach increased kindergarten enrollment when there were relatively few births five years earlier. The median growth between births and kindergarten enrollment over the past 16 years was 20.8 percent. The average growth rate used to project enrollment was 1.029. This compares to the 1.052 rate observed in 2013 and the twenty-year median growth rate of 1.015. Taking these three key factors into consideration, I cannot consider the projected decline as overly pessimistic.

These projections are based upon several key assumptions revolving around the notion that the recent past is a good predictor of the near future. The projection assumes that the following school policies will continue: kindergarten will remain full-day; retention policies will not change and limited enrollment of Colebrook residents in magnet schools. The projection assumes the following population growth factors will not change appreciably: births will average nine over the 2014 to 2018 period, a 44.5 percent increase between the number of births and subsequent kindergarten enrollment and a student migration of +3.2 percent. Additionally, 14 percent of parents will start their children in kindergarten at age six (or have had a special education child held in pre-school for an extra year); there will be one new housing unit constructed annually and 18 sales of existing homes.

It is important to remember that the cohort survival method relies on observed data from the recent past. Its key assumption is that those conditions will persist. It does not try to predict when the economic conditions might change. We cannot know today how long these conditions will continue. This projection should be used as a starting point for local planning. Examine the factors and assumptions underlying the method. You know your community best. Apply your knowledge of the specific conditions in Colebrook and then make adjustments as necessary.

**Appendix A. Colebrook Consolidated School Enrollment Projected By Grade to 2023**

School Year	Birth Year <sup>1</sup>	Births	K <sup>2</sup>	1	2	3	4	5	6	PreK	PK-6 Total
2003-04	1998	15	14	13	15	24	23	20	19	1	129
2004-05	1999	14	16	13	10	17	23	22	20	0	121
2005-06	2000	16	12	17	15	10	19	22	20	1	116
2006-07	2001	11	14	16	16	18	10	22	25	0	121
2007-08	2002	9	14	16	18	19	19	15	21	0	122
2008-09	2003	12	16	11	17	17	20	19	16	0	116
2009-10	2004	15	15	16	11	20	17	21	19	0	119
2010-11	2005	8	14	14	17	11	20	17	19	0	112
2011-12	2006	7	8	11	16	17	11	20	16	0	99
2012-13	2007	14	16	11	12	17	15	12	21	0	104
2013-14	2008	6	12	14	12	13	15	17	15	0	98
<b>Projected</b>											
2014-15	2009	8	<i>13</i>	12	15	13	12	16	17	0	98
2015-16	2010	12	15	12	13	16	12	13	16	0	97
2016-17	2011	5	<i>10</i>	15	13	14	15	13	13	0	93
2017-18	2012	7	<i>12</i>	9	16	14	13	16	13	0	93
2018-19	2013	2	<i>7</i>	11	10	17	13	14	16	0	88
2019-20	2014	6	<i>10</i>	6	12	11	16	14	14	0	83
2020-21	2015	10	12	10	6	13	10	17	14	0	82
2021-22	2016	10	12	12	11	6	12	11	17	0	81
2022-23	2017	10	12	12	13	12	6	13	11	0	79
2023-24	2018	10	12	12	13	14	11	6	13	0	81

<sup>1</sup> 1998 to 2012 births from the State Department of Public Health. Births in 2011 and 2012 are preliminary. Births in 2013 were estimated from in-state births through August. Births in 2015 were based on DRG E 2010 fertility rates and the Connecticut State Data Center projections of women of child-bearing ages in 2015.

<sup>2</sup> Based on 5-year averages of births 5- and 6- years ago and retention in most years. Italicized estimated were set to five more than births five-years prior.

**Appendix B. Growth from Grade to Grade across Years**

<b>October of Year</b>	<b>K</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>PreK</b>	<b>Average</b>	<b>Estimated Migration<sup>1</sup></b>
<b>2004</b>	1.143	0.929	0.769	1.133	0.958	0.957	1.000		0.958	-3.16%
<b>2005</b>	0.750	1.063	1.154	1.000	1.118	0.957	0.909		1.033	1.18%
<b>2006</b>	1.273	1.333	0.941	1.200	1.000	1.158	1.136		1.128	10.84%
<b>2007</b>	1.556	1.143	1.125	1.188	1.056	1.500	0.955		1.161	12.05%
<b>2008</b>	1.333	0.786	1.063	0.944	1.053	1.000	1.067		0.985	2.25%
<b>2009</b>	1.000	1.000	1.000	1.176	1.000	1.050	1.000		1.038	4.65%
<b>2010</b>	1.750	0.933	1.063	1.000	1.000	1.000	0.905		0.983	-1.15%
<b>2011</b>	1.143	0.786	1.143	1.000	1.000	1.000	0.941		0.978	1.23%
<b>2012</b>	1.143	1.375	1.091	1.063	0.882	1.091	1.050		1.092	2.63%
<b>2013</b>	2.000	0.875	1.091	1.083	0.882	1.133	1.250		1.052	8.70%
<b>3-Year Ave. Weighted 3-Year</b>	1.429	1.012	1.108	1.049	0.922	1.075	1.080		1.041	
	1.571	1.027	1.100	1.063	0.902	1.097	1.132		1.053	
<b>5-Year Ave. Weighted 5-Year</b>	1.407	0.994	1.077	1.064	0.953	1.055	1.029		1.029	
	1.500	1.007	1.091	1.056	0.929	1.072	1.072		1.038	
<b>Enrollment Multiplier</b>		0.994	1.077	1.064	0.953	1.055	1.029			

<sup>1</sup> Based on enrollment in grades 3-6 one year compared to enrollments in grades 2-5 the previous year with an adjustment for Colebrook residents enrolled in other public schools.